

WHAT IS CLAIMED IS:

1. A fluid valve apparatus comprising:
 - a base body having a fluid intake through which fluid flows in, a fluid outlet through which fluid is discharged, and a valve accommodation chamber formed between said fluid intake and said fluid outlet;
 - a cylindrical valve accommodated movably in said valve accommodation chamber in said base body; and
 - a driving portion for moving said cylindrical valve in a direction for adjusting the opening degree of said cylindrical valve,said cylindrical valve including:
 - an outer peripheral wall face which forms an outer peripheral flow path in said cylindrical valve so that fluid flows from said fluid intake to said fluid outlet;
 - an inner peripheral wall face which forms an inner peripheral flow path in said cylindrical valve so that fluid flows from said fluid intake to said fluid outlet;
 - a first valve section which forms a first valve flow path with a first valve receiving section of said base body so that fluid flows through one of said outer peripheral flow path and said inner peripheral flow path; and
 - a second valve section which forms a second valve flow path with a second valve receiving section of said base body so that fluid flows through the other of said outer peripheral flow path and said inner peripheral flow path,wherein
said cylindrical valve is moved by said driving portion so as to change flow path areas of said first valve flow path and said second valve flow path thereby changing the quantity of fluid flowing through the outer peripheral flow path and fluid flowing through the inner peripheral flow path of the cylindrical valve.
2. The fluid valve apparatus according to claim 1, wherein said cylindrical valve is disposed in the valve accommodation chamber of said base body such that a shaft end section in the axial direction thereof confronts fluid flowing

from said fluid intake to said fluid outlet.

3. The fluid valve apparatus according to claim 1, wherein said driving portion comprises a driving motor mounted on said base body and a deceleration converting section for converting a rotary motion of said driving motor to a linear motion of said cylindrical valve.
4. The fluid valve apparatus according to claim 2, wherein said driving portion comprises a driving motor mounted on said base body and a deceleration converting section for converting a rotary motion of said driving motor to a linear motion of said cylindrical valve.
5. The fluid valve apparatus according to claim 3 wherein said deceleration converting section has a direct-acting shaft capable of moving in the axial direction of said cylindrical valve with a rotation of said driving motor, and wherein
said cylindrical valve includes an outer cylindrical section having said outer peripheral wall face which forms said outer peripheral flow path and said inner peripheral wall face which forms said inner peripheral flow path, an inner cylindrical section having a shaft hole provided on the side of an inner periphery of said outer cylindrical section and arm sections for connecting said outer cylindrical sections to said inner cylindrical sections, wherein an initial position in the axial direction of said cylindrical valve with respect to said direct-acting shaft is capable of being adjusted by advancing or retracting a male thread section formed in the outer peripheral face of said direct-acting shaft with respect to a female thread section formed in the inner peripheral face of a shaft hole of said inner cylindrical section of said cylindrical valve, the both thread sections meshing with each other.
6. The fluid valve apparatus according to claim 1, further comprising an urging force generating section for generating an urging force for urging from one end section to the other end section in the axial direction of said cylindrical

valve, wherein

said urging force generating section generates an urging force for urging from the one end section to the other end section in the axial direction of said cylindrical valve by setting a pressure receiving area on the side of the one end section in the axial direction of said cylindrical valve larger than a pressure receiving area on the side of the other end section in the axial direction of said cylindrical valve.

7. The fluid valve apparatus according to claims 1, wherein a foreign matter invasion blocking section for keeping fluid flowing through at least one of said outer peripheral flow path and said inner peripheral flow path of said cylindrical valve apart from said driving portion is provided on at least one of said cylindrical valve and said base body so as to block invasion of foreign matter contained in fluid.
8. The fluid valve apparatus according to claims 1, the fluid valve apparatus is provided in the downstream or upstream of a fuel cell system.
9. The fluid valve apparatus according to claim 6, further comprising an urging force generating section for generating an urging force for urging from one end section to the other end section in the axial direction of said cylindrical valve wherein
said urging force generating section generates an urging force for urging from the one end section to the other end section in the axial direction of said cylindrical valve by setting a pressure receiving area on the side of the one end section in the axial direction of said cylindrical valve larger than a pressure receiving area on the side of the other end section in the axial direction of said cylindrical valve.